



**(A) Student Handout. Telescope Observations**

NAME: \_\_\_\_\_

**1. Explain how you think we know about the planets and moons in our solar system.**

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**2. Record Your Observations.**

**Draw**

**Describe**

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**3. Based on your observations, record your questions for future exploration.**

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**(B) Student Worksheet. Fly By Mission Observations**

NAME: \_\_\_\_\_

**1. Record Your Observations.**

Draw	Describe

**2. Which of your questions (based on your “telescope” observations) did the fly-by mission answer? What are the answers?**

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**3. What new or remaining questions do you have for a future spacecraft that can orbit the planet?**

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**(C) Student Worksheet. Orbiter Mission Observations**

**1. Record Your Observations.**

NAME: \_\_\_\_\_

**Draw**

**Describe**

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**2. Which of your questions (based on your “telescope” and fly-by observations) did the orbiter answer? What are the answers?**

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**3. What new or remaining questions do you have for a future spacecraft that can land on the planet?**

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**(D) Student Worksheet. Lander/Rover Mission Plan (1 of 2)**

**1. Plan Your Observations.**

**NAME:** \_\_\_\_\_

**Draw the Landing Site**

**Describe Features to Observe**

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**2. How did your team decide on a landing site?**

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**(D) Student Worksheet. Lander/Rover Mission Plan (2 of 2)**

NAME: \_\_\_\_\_

**3. Record Your Observations.**

Draw	Describe

**4. Which of your questions did this mission answer? What are the answers?**

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**(E) Student Worksheet. Mission Type Comparisons (1 of 3)**

NAME: \_\_\_\_\_

1. In the tables below, list the kinds of information you can collect from each type of mission, as well as the advantages and disadvantages of using each type.

Mission Type	Type of Information	Advantages	Disadvantages
Telescope Observations			
Fly By Missions			



**(E) Student Worksheet. Mission Type Comparisons (2 of 3)**

NAME: \_\_\_\_\_

1. In the tables below, list the kinds of information you can collect from each type of mission, as well as the advantages and disadvantages of using each type.

Mission Type	Type of Information	Advantages	Disadvantages
Orbiter Missions			
Lander/Rover Missions			

**(E) Student Worksheet. Mission Type Comparisons (3 of 3)**

NAME: \_\_\_\_\_

In addition to engineering and technology, teamwork among people with different perspectives is important in answering science questions. Reflect on the following:

Question	My Thoughts
1. What were the advantages of working on a team to study the “strange new planet”?	
2. What were the disadvantages of working on a team to study the “strange new planet”?	
3. What could you do to encourage good teamwork in the future?	
4. Why is it important for many people with different perspectives and backgrounds to work together?	
5. How do you think scientists and engineers benefit from working together?	



**(F) Student Worksheet. Humans to Mars Mission Concept**

NAME: \_\_\_\_\_

1. Congratulations. You've just been selected to be part of a team that designs the first human mission to Mars! This mission is daring, and will require the skills and talents of many people.

**Human Aspiration:**  
Our human mission to Mars will seek answers to the following science questions:

**Human Innovations:**  
Engineering and Technology Tools we imagine will be needed to answer these questions:

1.	
2.	
3.	
4.	
5.	

2. Compare your team's ideas to those of other teams. What ideas were similar? Which ideas did you appreciate from other teams that your team didn't think of?

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